

IN THE COURT OF COMMON PLEAS
SUMMIT COUNTY, OHIO

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SUMMIT COUNTY
CLERK OF COURTS

STATE OF OHIO,

Plaintiff,

- v. -

DOUGLAS PRADE,

Defendant.

Index No. CR 1998-02-0463

JUDGE JUDY L. HUNTER

FILED UNDER SEAL

**AMICUS CURIAE BRIEF OF THE INNOCENCE NETWORK
IN SUPPORT OF DEFENDANT DOUGLAS PRADE**

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<i>O'Donnell v. New York</i> , 26 A.D.3d 59, 808 N.Y.S.2d 266 (N.Y.App.Div. 2d Dept. 2005).....	20

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<i>Otero v. Warnick</i> , 241 Mich.App. 143, 614 N.W.2d 177 (Mich.Ct.App. 2000).....	19
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OTHER AUTHORITIES	
Armen H. Merjian, <i>Anatomy of a Wrongful Conviction: State v. Dedge and What it Tells Us About Our Flawed Criminal Justice System</i> , 13 U. Pa. J. L. & Soc. Change 137 (2009-10).....	37
B.L. Cutler & S.D. Penrod, <i>Mistaken Identification: The Eyewitness, Psychology, and the Law</i> (1995).....	31
Brandon L. Garrett & Peter J. Neufeld, <i>Invalid Forensic Science Testimony and Wrongful Convictions</i> , 95 Va. L. Rev 1 (2009)	13
Brandon L. Garrett, <i>Convicting The Innocent: Where Criminal Prosecutions Go Wrong</i> (2011).....	23
Brian Cutler & Margaret Bull Kovera, <i>Evaluating Eyewitness Identification</i> (2010).....	29
Brian H. Bornstein at al, <i>Effects of Exposure Time and Cognitive Operations on Facial Identification Accuracy</i> , Psychol., Crime and L. (June 2012)	27
Brian L. Cutler, Steven D. Penrod, & Todd K. Martens, <i>Improving the Reliability of Eyewitness Identification: Putting Context Into Context</i> , 72 J. Applied. Psychol. 629 (1987).....	29
Burt, <i>Applied Psychology</i> (1948).....	30

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C. Michael Bowers, <i>Problem-Based Analysis of Bitemark Misidentifications: The Role of DNA</i> , 159S Forensic Sci. Int'l S104 (2006).....	<i>passim</i>
C. Michael Bowers, <i>The Scientific Status of Bitemark Comparisons</i> in David L. Faigman, et al., <i>Modern Scientific Evidence: Forensics</i> 483 (2008).....	10
Christian A. Meissner et al., <i>Person Descriptions as Eyewitness Evidence</i> , in 2 <i>The Handbook of Eyewitness Psychology: Memory for People</i> (R.C.L. Lindsay et al. Eds., 2007)	29
D. Whittaker, <i>Some Laboratory Studies on the Accuracy of Bitemark Identification</i> , 25 Int'l Dent. J. 166 (1975).....	17
D.L. Faigman et al., <i>Modern Scientific Evidence: The Law and Science of Expert Testimony</i> (2005-06)	17
Dan Hinkle, <i>After 20 Years in Prison, Man Cleared in '86 Waukegan Rape</i> , Chicago Tribune (May 15, 2012).....	22
David Sweet, <i>Bitemarks as Biological Evidence</i> in <i>Bitemark Evidence</i> , 183 (Robert B.J. Dorian Ed. 2005).....	12
Dillard S. Gardner, <i>The Perception and Memory of Witnesses</i> , 18 Cornell L. Q. 391 (1933).....	28
Donna Domino, <i>Dentists Sue Over Bite Mark Testimony</i> (Jan. 18, 2012), http://www.drbcuspid.com	22
E.F. Loftus & E. Greene, <i>Warning: Even Memory for Faces May Be Contagious</i> , 4 L. & Hum. Behav. 323 (1980).....	32
E.F. Loftus et al., <i>Semantic Integration of Verbal Information into Visual Memory</i> , 4 J. of Experimental Psychol.: Hum. Learning & Memory 19 (1978)	32
Elizabeth F. Loftus et al., <i>Eyewitness Testimony: Civil and Criminal</i> (4th Ed. 2007).....	26
Elizabeth Loftus, <i>Eyewitness Testimony</i> (1996 Ed.).....	<i>passim</i>
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Flynn McRoberts & Steve Mills, <i>From the Start, a Faulty Science; Testimony on Bite Marks Prone to Error</i> , Chicago Tribune (Oct. 19, 2004).....	<i>passim</i>
Fred Dickey, <i>Worst Case Scenario</i> , L.A. Times Mag. (Jun. 25, 2000)	36

TABLE OF AUTHORITIES

	Page(s)
Gary L. Wells & Deah S. Quinlivan, <i>Suggestive Eyewitness Identification Procedures and the Supreme Court’s Reliability Test in Light of Eyewitness Science: 30 Years Later</i> , 33 L. & Hum. Behav. 1 (2009)	31, 32
Gary L. Wells & Elizabeth A. Olsen, <i>Eyewitness Testimony</i> , 54 Annual Rev. Psychol. 277 (2003).....	27
Gary L. Wells et al., <i>Eyewitness Evidence: Improving Its Probative Value</i> , 7 Psychol. Sci. Pub. Int. 45 (2006)	27
Gary L. Wells, et al., <i>Distorted Retrospective Eyewitness Reports as Functions of Feedback and Delay</i> , 9 J. Experimental Psychol.: Applied 42 (2003)	29
Gary L. Wells, <i>Eyewitness Identification: Systemic Reforms</i> , 2006 Wis. L. Rev. 615 (2006).....	26
Geoffrey R. Loftus & Erin M. Harley, <i>Why Is It Easier To Identify Someone Close Than Far Away?</i> , 12 Psychonomic Bull. & Rev. 43 (2005).....	29
Gunter Koehnken et al., <i>Forensic Applications of Line-Up Research</i> , in <i>Psychological Issues in Eyewitness Identification</i> (Siegfried L. Sporer et al. Eds., 1996)	34
H. David Sheets et al, <i>Dental Shape Match Rates in Selected and Orthodontically Treated Populations in New York State: A Two-Dimensional Study</i> , 56 J. Forensic Sci. 621 (2011).....	16
I. A. Pretty, <i>Unresolved Issues in Bitemark Analysis</i> , in <i>Bitemark Evidence</i> 547 (Robert B.J. Dorian Ed. 2005)	15
I.A. Pretty & D. Sweet, <i>The Scientific Basis For Human Bitemark Analysis – A Critical Review</i> , 41 Science and Justice 85 (2001).....	12
I.A. Pretty, <i>A Web-Based Survey of Odontologist’s Opinions Concerning Bitemark Analyses</i> , 48 J. Forensic Sci. 1 (2003)	13, 15
I.A. Pretty, <i>Reliability of Bitemark Evidence</i> in <i>Bitemark Evidence</i> 531 (Robert B. J. Dorion Ed. 2005)	12
J. Don Read, et al., <i>Changing Photos of Faces: Effects of Exposure Duration and Photo Similarity on Recognition and the Accuracy-Confidence Relationship</i> , 16 J. Experimental Psychol.: Learning Memory & Cognition 870 (1990)	29
John Smith, <i>Another Chance for Convicted Murderer, Post Standard</i> (Syracuse, NY) (Apr. 21, 2006).....	21
K.E. Patterson, & A.D. Baddeley, <i>When Face Recognition Fails</i> , 3 J. Experimental Psychol.: Hum. Learning & Memory 406 (1977).....	29

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	Page(s)
Kenneth A. Deffenbacher et al., <i>Mugshot Exposure Effects: Retroactive Interference, Mugshot Commitment, Source Confusion, and Unconscious Transference</i> , 30 Law & Hum. Behav. 287 (2006).....	33
Leonora LaPeter, <i>Guilty Until Proven Innocent</i> , St. Petersburg Times (Nov. 14, 2004).....	37
M.J. Saks & J.J. Koehler, <i>The Coming Paradigm Shift in Forensic Identification Science</i> , 309 Science 892 (2005)	22
Mark A. Godsey & Marie Alou, <i>She Blinded Me With Science: Wrongful Convictions and the “Reverse CSI-Effect”</i> , 17 Texas Wesleyan L. Rev. 481 (2011).....	21
Mark Hansen, <i>Out of the Blue</i> , 82 A.B.A.J. 50, 53-54 (1996)	11, 19
Mark Hansen, <i>The Uncertain Science of Evidence</i> , 91 A.B.A.J. 48 (2005).....	19
Mary A. Bush et al., <i>Statistical Evidence for the Similarity of the Human Dentition</i> , 56 J. Forensic Sci. 118 (2010).....	16
Mary A. Bush et al., <i>Inquiry into the Scientific Basis for Bitemark Profiling and Arbitrary Distortion Compensation</i> , 55 J. Forensic Sci. 976 (2010).....	15, 16
Mary A. Bush et al., <i>The Response of Skin to Applied Stress: Investigation of Bitemark Distortion in a Cadaver Model</i> , 55 J. Forensic Sci. 71 (2010).....	14
Melanie Lasoff Levs, <i>Bitemark Evidence Loses Teeth</i> , 94 A.B.A.J. 16 (2008)	19
Michael Bowers & I.A. Pretty, <i>Expert Disagreement in Bitemark Casework</i> , 54 J. Forensic Sci. 915 (2009)	13
Paul Giannelli & Edward Imwinkelreid, Jr., <i>Scientific Evidence</i> , (4 th Ed. 2011).....	12, 13
Paul Purpura, <i>Long Nightmare Ending for Wrongly Convicted Man; DNA Brings Dismissal of Case After 16 Years</i> , New Orleans Times-Picayune (May 26, 2006).....	20
Peter Shapiro & Steven Penrod, <i>Meta Analysis of Facial Identification Studies</i> , 100 Psychol. Bull. 140 (1986)	26, 31
R.C.L. Lindsay et al., <i>How Variations in Distance Affect Eyewitness Reports and Identification Accuracy</i> , 32 Law & Hum. Behav. 526 (2008).....	29
Ray Krone, <i>Forensic Odontology</i> , http://bitemarks.org/tag/ray-krone/	21
Raymond G. Miller et al., <i>Uniqueness of the Dentition as Impressed in Human Skin: A Cadaver Model</i> , 54 J. Forensic Sci. 909 (2009)	16
S. Keiser-Nielsen, <i>Forensic Odontology</i> 1 U. Tol. L. Rev. 633 (1969)	16

TABLE OF AUTHORITIES

	Page(s)
Samantha Weinberg, <i>Trials and Errors</i> , The Observer (May 4, 2003).....	36
Samuel R. Gross et al., <i>Exonerations in the United States, 1989 Through 2003</i> , 95 J. Crim. L. & Criminology 523 (2005).....	24
Santos, <i>With DNA from Exhumed Body, Man Finally Wins Freedom</i>	21
Sharif Durhams, <i>Judge Frees Man After 23 Years</i> , Milwaukee Journal Sentinel (Jan. 30, 2009)	20
Steve Mills & Jeff Coen, <i>12 Years Behind Bars, Now Justice at Last</i> , Chicago Tribune (Feb. 1, 2005).....	20
Tom Kertscher, <i>Freed Man Won't Be Retried for '84 Killing</i> , Milwaukee Journal Sentinel (July 29, 2009).....	19
U.S. Dep't of Justice, Nat'l Institute of Justice, <i>Convicted by Juries, Exonerated by Science: Case Studies in the Use of DNA Evidence to Establish Innocence After Trial</i> , Pub. No. NCJ 161258 (1996).....	24
Clarence Elkins, The Innocence Project, www.innocenceproject.org/Content/Clarence_Elkins.php	35
Editorial, <i>An Innocent Man, 12 Years in Prison</i> , San Jose Mercury News (Mar. 10, 2000).....	36
<i>Eyewitness Misidentification</i> , The Innocence Project, http://www.innocenceproject.org/understand/Eyewitness-Misidentification.php	23
Forensic Odontology, <i>Diplomates Reference Manual</i>	14
<i>Judge Orders Columbus Man Freed From Prison After DNA Tests</i> , The Columbus Dispatch (Aug. 13, 2008) www.dispatch.com/content/stories/local/2008/08/11/dna.html	36
Nat'l Research Council, <i>Ballistics Imaging</i> (2008).....	13
Nat'l Research Council, <i>Forensic Analysis: Weighing Bullet Lead Evidence</i> (2004).....	13
Nat'l Research Council, <i>On the Theory and Practice of Voice Identification</i> (1979).....	13
National Research Council of the National Academies, <i>Strengthening Forensic Science in the United States: A Path Forward</i> ("NRC Report") (2009)	<i>passim</i>
Robert McClendon, The Innocence Project, www.innocenceproject.org/Content/Robert_McClendon.php	35

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	Page(s)
<i>Robert McClendon: "Hello Truth"</i> DNA Diagnostics Center, (Aug. 27, 2008) www.forensicdnacenter.com/resources/Ohio-Innocence-McClendon-Released.html	36
<i>Search the Profiles</i> , The Innocence Project, http://www.innocenceproject.org/know/Search-Profiles.php	23
<i>Waco Men Were Victims of an Investigation Gone Awry</i> , AP State & Local Wire, (Dec. 15 2001)	19
www.forensicdnacenter.com/resources/Ohio-Innocence-McClendon-Released.html	36

I. PRELIMINARY STATEMENT

Douglas Prade, a former Akron Police Captain, was convicted of murdering his ex-wife Dr. Margo Prade in 1998 and sentenced to life in prison. Mr. Prade has always maintained his innocence, a claim strongly supported by recent post-conviction DNA testing that excludes Mr. Prade as the donor of DNA at the site of a bite mark incurred by Dr. Prade during her murder. *See generally* Defendant's Petition for Post-Conviction Relief (and Incorporated Memorandum in Support) Or, In the Alternative, Motion for a New Trial (the "Prade Petition") (setting forth in detail the prior and recent DNA testing methods, their results and why they strongly indicate that Mr. Prade was not the murderer). This new evidence, which further undermines the already unreliable evidence on which Mr. Prade was convicted, requires that this Court vacate or set aside the judgment or sentence or grant other appropriate relief, including a new trial. R.C. 2953.21(A)(1)(a).

The only physical evidence that allegedly linked Mr. Prade to the crime was "bite mark" evidence. This "bite mark" evidence was introduced through two experts for the prosecution, who compared a plaster cast of Mr. Prade's dentition to a photograph of a bite mark on Dr. Prade's skin. In the almost fifteen years since that conviction, such bite mark evidence has been shown, over and over again, to be utterly unreliable. Recent scientific studies have concluded that forensic odontologists cannot reliably match bite marks to an individual defendant's dentition and have shown that bite mark analysis has limited probative value and is highly prone to error. In light of those studies and some high profile exonerations, bite mark evidence has been largely discredited as a reliable or valid method of forensic science. A 2002 study of bite mark analysis concluded that, on average, forensic odontologists "falsely identified an innocent person as the biter nearly two-thirds of the time." Flynn McRoberts & Steve Mills, *From the*

Start, a Faulty Science; Testimony on Bite Marks Prone to Error, Chicago Tribune (Oct. 19, 2004) at 2. DNA testing has, in many cases, exonerated defendants previously convicted on the basis of bite mark evidence, undermining any credibility of the bite mark evidence. It appears that this is one of those cases.

Mr. Prade's conviction was also based on another piece of highly unreliable evidence in the form of testimony from two alleged eyewitnesses, who belatedly identified Mr. Prade as an individual each claimed to have seen briefly near the scene of the crime on the morning of the murder. Leaving to the side the entirely circumstantial nature of this evidence, a robust body of scientific research as well as lessons from the exonerations of the 210 individuals who were wrongly convicted based, at least in part, on erroneous eyewitness identification testimony, seriously undermines the reliability of these eyewitness identifications of Mr. Prade.

As discussed more fully below, the testimony offered by prosecution witnesses Howard Brooks and Robin Husk, already weak and inconsistent, is plagued by many of the factors demonstrated by scientific research to undermine the reliability of an eyewitness identification: both witnesses had a very limited opportunity to view the individual they later identified as Mr. Prade; both identifications were made after great delay and after initial identifications were not made; one witness claimed that the individual he identified was wearing a hat, thereby making identification significantly more difficult; and the identifications were made after significant media coverage showing Mr. Prade's likeness were widely circulated in the community.

For the reasons set forth herein and in the Prade Petition, Amicus Curiae, The Innocence Network, urges this Court to grant appropriate post-conviction relief or, in the alternative, order a new trial.

II. INTEREST OF THE AMICUS CURIAE

The Innocence Network (the “Network”) is an association of organizations dedicated to providing pro bono legal and investigative services to prisoners for whom post-conviction DNA evidence may provide conclusive proof of innocence. The 64 current members of the Network represent hundreds of prisoners with claims of actual innocence in all 50 states and the District of Columbia, as well as in Canada, the United Kingdom, the Netherlands, Ireland, New Zealand and Australia. To date, the work of the members of the Network has led to the exoneration of 292 individuals, who together served more than 2000 years in prison for crimes they did not commit.

The Network and its members are also dedicated to improving the accuracy and reliability of the criminal justice system in order to prevent future wrongful convictions. Drawing on lessons from cases in which innocent people were wrongfully convicted, the Network advocates for reforms to the justice system to improve its accuracy and fairness, including in the areas of eyewitness identification—the leading contributing cause of wrongful convictions—and the use of invalidated and/or scientifically unfounded forensic sciences—the second most common contributing cause of wrongful convictions (including the claims of forensic odontologists that they could match particular bite marks with the teeth (or “dentition”) of a particular defendant—bite mark identification analysis). The work of the Network gives it unique expertise and a particularly strong interest in ensuring that, when criminal convictions are predicated upon inherently flawed and historically misapplied forensic disciplines like bite mark identification analysis or unreliable eyewitness identification testimony, and subsequent DNA testing definitively excludes the defendant, the defendant is able to obtain exoneration or a new trial. At any new trial, the now-discredited bite mark analysis and flawed eyewitness testimony

can be accorded the proper weight in light of the existence of exculpatory DNA evidence, enabling the defendant to prove his innocence. This interest is directly implicated in Douglas Prade's case.

III. STATEMENT OF FACTS

The Prade Petition contains a thorough description of the underlying facts of the case. To avoid needless repetition, we include here only the facts that relate directly to the issues raised in this brief. On November 26, 1997, Dr. Margo Prade ("Dr. Prade" or "the victim") was shot and killed in her van outside of her Akron, Ohio medical office. There were no eyewitnesses to the murder and the murder weapon was never found. The evidence showed that there was a significant struggle between Dr. Prade and her killer. During that struggle, the killer bit Dr. Prade so hard that he left a bite mark impression on her skin, through her blouse and lab coat (Trial Transcript ("TT") at 1125:13-22; 1164:3-11; 1172:7-14). This bite mark also drew a significant amount of Dr. Prade's blood, which saturated the bite mark area on her lab coat, which made it impossible, given the technology available in 1998, to test for the killer's DNA. Testing for that DNA on the lab coat is now possible, and that testing has led to the definitive exclusion of Mr. Prade as the donor of the male DNA found at the site of the bite mark.

In February 1998, Mr. Prade was charged with the murder. *State v. Prade*, 139 Ohio App. 3d 676, 682, 745 N.E.2d 475 (9th Dist. 2000). He maintained his innocence and was convicted after trial in September 1998 and sentenced to life in prison. *Id.* at 683. The Court of Appeals affirmed his conviction on appeal. *Id.* at 700.

In Mr. Prade's case, three experts in forensic odontology (two for the prosecution and one for the defense) gave inconsistent testimony. They testified that the bite mark on Dr. Prade's arm, made through two layers of her clothing, was variously (i) made by Mr. Prade (Marshall TT

at 1406:1-14); (ii) *consistent* with Mr. Prade's dentition (*i.e.*, that Mr. Prade *could* have caused the bite mark) (Levine TT at 1225:25-1226:2; 1228:10-17); or (iii) could not have possibly been made by Mr. Prade (Baum TT at 1648:10-1649:19). Each of these experts compared a cast of Mr. Prade's dentition with a photograph of the mark. (Levine TT at 1214:13-23; Marshall TT at 1381:21-1382:2; Baum TT at 1649:11-19).

The weak bite mark testimony was bolstered by testimony from two prosecution witnesses who claimed that they had seen Mr. Prade near the scene of the crime around the time of the murder. By their own accounts, each witness briefly glimpsed the man later identified as Mr. Prade and neither man claimed an ability to make any identification in the immediate aftermath of the crime. (Brooks TT at 1429:23-1430:4; Husk TT at 1261:13-15; 1264:6-1265:24). Indeed, only one of the witnesses identified himself to law enforcement after becoming aware of Dr. Prade's murder, and he told law enforcement during his first two interviews that he would not be able to make an identification of the person he saw based on his limited observation. It was only months after the murder, during his third interview with law enforcement, that this witness made an affirmative identification of law enforcement's suspect, Mr. Prade. (Brooks TT at 1444:16-23; Geiger at TT 1560:10-16; Geiger TT at 1560:1-6; Lacy TT at 1791:21-1792:2; Myers TT at 1058:24-1059:15). The state's second witness only came forward on the eve of trial, nine months after the murder took place, after seeing Mr. Prade's picture on television news and in the paper many times in connection with this high-profile prosecution. (Husk TT 1273:7-23; 1278:9-22).

A. The Contradictory Bite Mark Evidence Presented at Trial

At trial, the jury heard from three forensic odontologists, all of whom reached different conclusions as to whether the bite mark was made by Mr. Prade. (Marshall TT at 1406:1-14;

Levine TT at 1225:25-1226:2; Baum TT at 1648:10-1649:19). While they disagreed regarding the source of the bite mark, they all agreed that the mark was in fact caused by a vicious human bite and was a rich potential source for the killer's DNA. One of the prosecution's experts testified at trial that the bite mark impression on Dr. Prade's arm was "the best possible source of DNA evidence as to [the] killer's identity," and Mr. Prade's expert at trial testified that the killer "probably slobbered all over" the lab coat at the site of the bite mark. (Callaghan TT at 1125:13-22; Baum TT at 1629:5-10). But the DNA testing that took place prior to the trial "excluded" Mr. Prade only in the sense that "the bite mark show[ed] [Dr.] Margo Prade's DNA only," as her lab coat was too soaked with her own blood for the testing to detect and identify the killer's DNA. (Callaghan TT at 1125:23-1126:2). Thus, the 1998 DNA tests did not provide any information about the killer.

Thus, the only physical evidence that purportedly tied Mr. Prade to the crime scene, and the only physical evidence upon which his conviction could have been based, was the expert testimony offered by the prosecution's forensic odontologists regarding the bite mark impression on Dr. Prade's arm. On the crucial point of whether the Defendant made the bite mark, the three experts reached different conclusions. One of the State's experts, Dr. Thomas Marshall, testified that the bite mark "was made by Captain Prade." (Marshall TT at 1406:12-12). Dr. Lowell Levine, the State's other bite mark expert, testified that the bite mark was "consistent with" Mr. Prade's dentition, but concluded that "there's just not enough [evidence] to say one way or another" that the bite mark was made by Mr. Prade. (Levine TT at 1219:5-10). Dr. Baum, the Defendant's bite mark expert, concluded that, because of the poor fit of Mr. Prade's dentures, "the act of biting for Mr. Prade, [wa]s a virtual impossibility" and thus that Mr. Prade could not

have bitten Dr. Prade hard enough to leave a mark on her flesh through two layers of clothing (Baum TT at 1641:17-20).

B. Unreliable and Vague Eyewitness Testimony Presented at Trial

The State also offered the testimony of two witnesses who identified Mr. Prade as an individual that each witness saw near the crime scene on the morning of the murder. (There were no eyewitnesses to the actual murder itself). Neither witness was able to provide a specific, independent description of the man they saw, suggesting that neither had an independent memory of the face of the person he viewed. Tellingly, at trial, one witness, Robin Husk, was only able provide the most general description: “he was black, he was tall, moustache . . . glasses . . . bald.” (Husk TT at 1263-64). Mr. Husk was never able to provide a specific description of the individual’s height, build, complexion, or any other salient features that are the hallmarks of a strong identification memory. Howard Brooks provided an equally vague description of the driver of the speeding car that he saw before he was even aware a murder had taken place: he was wearing a hat—but was bald—and had a heavy moustache. (Brooks TT, 1435:6-16). Mr. Brooks admitted that at the time he saw the car and driver, he did not pay attention to them. (Brooks TT at 1425:24-25; 1430:1-4). Mr. Brooks never described the individual’s height, build, complexion or any other notable feature. Perhaps most tellingly, Mr. Brooks described a passenger in the speeding car but could not identify whether that person was male or female. This supposed passenger was never identified, and the prosecution never presented any evidence as to who the other person in the car might have been. (Brooks TT at 1436:4-14). Despite the obvious difficulties in identifying someone under such circumstances, Mr. Brooks rated the strength of his identification of Mr. Prade as “100%”. (Brooks TT at 1433:11).

Not only was Mr. Brooks' trial testimony vague, his prior statements concerning the person he saw were inconsistent. He was interviewed by the investigating officer, Detective Lacy, on three separate occasions. On the first occasion, he didn't mention the speeding car "cause [he] didn't think nothing of it." (Brooks TT at 1431:6-11). During the second interview, weeks later, Mr. Brooks maintained that, given his limited opportunity to view the person driving the speeding car and the fact that he was not paying careful attention, he would not be able to identify the car's driver. (Brooks TT at 1443:5-7). Despite Mr. Brooks' professed inability to make an identification or even provide any description of the individual he saw driving the speeding car, law enforcement again called Mr. Brooks for an interview, during which they showed him a photographic array containing a picture of Mr. Prade.¹ Mr. Brooks then identified Mr. Prade as the driver he saw speeding away from the crime scene. (Brooks TT at 1432-33:6-25,1:2).

Additionally, in the months between when the murder took place, in November 1997, and the date on which Mr. Brooks first identified Mr. Prade in a photo array, in February 1998, Mr. Prade became a suspect in his wife's high profile murder case, and his picture had appeared repeatedly on television and in various local newspapers covering the story of Dr. Prade's murder. Thus, Mr. Brooks had ample opportunity to see this media coverage, including Mr. Prade's picture, and be influenced by media coverage suggesting that Mr. Prade had killed his ex-wife.

¹ This photographic array has not been made available to Amicus and very little is known about the actual identification procedure used to elicit a positive identification of Mr. Prade from a witness who had been previously unable to even provide a specific description of the individual he saw. Should Mr. Prade receive a new trial, it would be critical for the trial court to evaluate the fairness of the procedures used by law enforcement to elicit this identification.

The other witness, Robin Husk, worked at a car dealership near the parking lot where Dr. Prade was murdered. He conceded at trial that he had learned of the murder on the day that it occurred. Yet, he did not come forward and identify Mr. Prade until the eve of trial, *over nine months after the murder*. Again, this was after Mr. Prade's picture was prominently featured in local press coverage of the murder in which he was identified as the prime suspect. (Husk TT at 1263:4-1266:21). Like Mr. Brooks, he had never met or seen Mr. Prade before the day of the murder. (Husk TT at 1261:13-15). Like Mr. Brooks, Mr. Husk only saw the man for a short period of time and did not learn that a murder had taken place until later. (Husk TT at 1265:1-4). Even though Mr. Husk later claimed that he saw Mr. Prade on television the night of the murder and said to his fiancée, "I've seen that man today," he admitted on the stand that he did not call the police or report his alleged sighting of the Defendant. (Husk TT at 1265:8-1266:12). In fact, when Mr. Husk was asked how much time had passed before he told anyone of his alleged encounter with the Defendant, he replied, "It's been almost a year, you know, since I've said anything." (Husk TT at 1266:16-18).

On cross examination, Mr. Husk admitted that he identified Mr. Prade's picture from a photo array only hours after looking at an article in the newspaper about Mr. Prade's supposed role in the killing. (Husk TT at 1273:7-23). Moreover, Mr. Husk admitted that he had seen Mr. Prade's picture numerous times in connection with the case in the paper and on TV. (Husk TT at 1278:9-22). Despite the time that had elapsed between Mr. Husk's supposed sighting and identification of the Defendant, and despite the facts that, on the day of the murder, Mr. Husk had never before seen the Defendant, had no idea that a murder would later take place, and the encounter to which Mr. Husk testified was extremely brief and unremarkable, Mr. Husk, like Mr.

Brooks, rated the certainty of his identification as “ten” on a “scale of one to ten.” (Husk TT at 1271:15-20).

IV. ARGUMENT

A. Bite Mark Identification Analysis Is Unreliable Opinion Testimony

1. Bite Mark Identification Has Been Discredited as a Reliable Method of Forensic Analysis

Bite mark identification analysis—the purported matching of a bite mark (often made on a human victim) and the teeth of a particular defendant—is, simply put, junk science. No empirical research has ever confirmed the fundamental assumptions of the field of bite mark identification analysis, including: (1) that the dental features of the biting teeth are unique (uniqueness); (2) that this uniqueness remains constant throughout a person’s lifetime (permanency); (3) that these unique dental features are transferred and recognizable every time the person bites into an impressionable object, such as human skin (transferability); and (4) that trained forensic dentists can accurately determine whether a mark or wound on a person’s body is a human bite mark, and link the unknown human bite mark to the one and only person who could have inflicted the bite mark (accuracy). See C. Michael Bowers, *The Scientific Status of Bitemark Comparisons*, in David L. Faigman, et al., *Modern Scientific Evidence: Forensics* 483 (2008).

The groundbreaking report by the National Research Council of the National Academies, *Strengthening Forensic Science in the United States: A Path Forward* (2009) (hereinafter “NRC Report”) undermined the uniqueness, permanency, transferability *and* accuracy assumptions underpinning forensic odontology. The NRC Report concluded:

No thorough study has been conducted of large populations to establish the uniqueness of bite marks; theoretical studies promoting the uniqueness theory

include more teeth than are seen in most bite marks submitted for comparison. There is no central repository of bite marks and patterns.

Id. at 174. The NRC Report also found that:

Although the methods of collection of bite mark evidence are relatively noncontroversial, there is considerable dispute about the value and reliability of the collected data for interpretation. Some of the key areas of dispute include the accuracy of human skin as a reliable registration material for bite marks, the uniqueness of human dentition, the techniques used for analysis, and the role of examiner bias.

Id. at 176. The NRC Report added:

Unfortunately, bite marks on the skin will change over time and can be distorted by the elasticity of the skin, the unevenness of the surface bite, and swelling and healing. These features may severely limit the validity of forensic odontology. Also, some practical difficulties, such as distortions in photographs and changes over time in the dentition of suspects, may limit the accuracy of the results.

Id. at 174.

The NRC Report invalidated the accuracy assumption when it commented:

Failure to acknowledge uncertainty in findings is common [in forensic science]: Many examiners claim in testimony that others in their field would come to the exact same conclusions about the evidence they have analyzed. Assertions of a “100 percent match” contradict findings of proficiency tests that find *substantial rates of erroneous results in some disciplines* (i.e., voice identification, *bite mark analysis*).

Id. at 1-9 and 1-10 (emphasis added). The NRC Report also commented on the “high percentage of false positive matches of bite marks using controlled comparison studies.” *Id.* at 174.

These problems are only compounded where bite marks are analyzed post-mortem, when blood pooling, decay and exposure to the elements can further distort bite marks.² For these

² Human bite marks can, in certain circumstances, also be confused with other post-mortem wounds caused by insect or animal bites or other injuries. Indeed, forensic odontologists lack training in forensic pathology and are not trained to identify and distinguish these types of post-mortem wounds from bite marks. *See, e.g.*, Mark Hansen, *Out of the Blue*, 82 A.B.A.J. 50, 53-54 (1996) (discussing the case of Henry Lee Harrison in Mississippi, whose 1990 rape and murder conviction was overturned, where Dr. Michael West testified at trial that 41 human bite marks matching the defendant’s teeth covered the body, and other experts later concluded that the bites had likely been caused, post-mortem, by ants and discussing the case of Kennedy Brewer in Mississippi, whose 1992 rape and

reasons, the National Research Council concluded that there is “no evidence of an existing scientific basis for identifying an individual to the exclusion of all others” by using bite mark comparisons, because there is “a lack of valid evidence to support many of the assumptions made by forensic dentists during bitemark comparisons.” NRC Report at 176, citing I.A. Pretty & D. Sweet, *The Scientific Basis For Human Bitemark Analysis – A Critical Review*, 41 *Science and Justice* 85 (2001).

Even advocates of bite mark evidence concede that bite mark comparison is not a highly accurate method of identification. See David Sweet, *Bitemarks as Biological Evidence*, in *Bitemark Evidence* 183, 190-91 (Robert B.J. Dorian Ed. 2005) (“Conclusions from physical comparison tests are necessarily conditional since a high level of certainty is not possible using such tests, which are subjective.”). One of the main reasons for the lack of reliability and validity of bite mark analysis is that the profession has failed to “set a minimum threshold for bitemark identification.” See C. Michael Bowers, *Problem-Based Analysis of Bitemark Misidentifications: The Role of DNA*, 159S *Forensic Sci. Int’l* S104, S106 (2006). There is no “minima of evidentiary value,” to determine how certain a match must be in order to positively identify a suspect. *Id.* Furthermore, there is “no minimum number of characteristics necessary to establish a positive identification.” Paul Giannelli & Edward Imwinkelreid, Jr., *Scientific Evidence*, Section 13.02 (4th Ed. 2011) (hereinafter “*Scientific Evidence*”). Thus, the opinions of bite mark experts are highly subjective and prone to error. *Scientific Evidence* at §13.04; see also I.A. Pretty, *Reliability of Bitemark Evidence*, in *Bitemark Evidence* 531, 543 (Robert B. J.

murder conviction was overturned, where Dr. West testified at trial that 19 human bite marks were made by the defendant’s upper teeth only, and an expert for the defense concluded that the bites appeared to have been made by insects).

Dorion Ed. 2005) (“...the range of ability [of odontologists] is wide, which indicates that the tests are still subjective, with a poor rate of interexaminer agreement.”).

It is therefore not surprising that, as in this case, experts in the field can (and do) frequently disagree as to whether a particular defendant’s dentition matches a given bite mark, and express varying degrees of certainty in their own opinions. *See, e.g.*, Michael Bowers & I.,A. Pretty, *Expert Disagreement in Bitemark Casework*, 54 J. Forensic Sci. 915 (2009). *See also* C. Michael Bowers, *Problem-Based Analysis of Bitemark Misidentifications: The Role of DNA*, 159S Forensic Sci. Int’l S104, S106 (2006); *Scientific Evidence* at §13.05; Brandon L. Garrett & Peter J. Neufeld, *Invalid Forensic Science Testimony and Wrongful Convictions*, 95 Va. L. Rev 1, 67 (2009); I.A. Pretty, *A Web-Based Survey of Odontologist’s Opinions Concerning Bitemark Analyses*, 48 J. Forensic Sci. 1 (2003).

Although bite mark evidence has been admitted in criminal cases across the United States since 1954, *see Doyle v. State*, 263 S.W.2d 779 (Tex. Crim. App. 1954), including in cases where the defendant was convicted and sentenced to death on the basis of bite mark testimony, *see* Garrett & Neufeld at 69-71 (discussing case of Ray Krone), recent studies have concluded that the “scientific basis” for bite mark identification and matching “is insufficient to conclude that bite mark comparisons can result in a conclusive match.” NRC Report at 175. For this reason and in response to the NRC Report,³ the American Board of Forensic Odontology (“ABFO”), the governing body that accredits forensic odontologists, has established bite mark

³ Other widely accepted forensic techniques such as voice print identification, comparative bullet lead analysis, and burn pattern analysis have been invalidated by The National Research Council based on new scientific research. *See* Nat’l Research Council, *On the Theory and Practice of Voice Identification* (1979); Nat’l Research Council, *Forensic Analysis: Weighing Bullet Lead Evidence* (2004); Nat’l Research Council, *Ballistics Imaging* (2008). Indeed, courts routinely defer to the NRC regarding whether a particular forensic technique is a valid scientific discipline. *See, e.g., State v. Johnson*, 922 P.2d 294, 335 (Ariz. 1996) (“[E]ndorsement by the NRC of [a particular fact finding] is strong evidence of general acceptance within the relevant scientific community.”); *State v. Tester*, 968 A.2d 895, 906 (Vt. 2009)(“The courts have almost uniformly followed the recommendation of the National Research Council.”); *Commonwealth v. Blasioli*, 713 A.2d 1117, 1119 n.3 (Pa. 1998).

terminology standards in its Manual of Policies, Procedures, Guidelines and Standards, which state that “[t]erms assuring unconditional identification of a perpetrator, or without doubt, are not sanctioned as a final conclusion” when an expert testifies in a legal proceeding. American Board of Forensic Odontology, *Diplomates Reference Manual* 116, available at <http://www.abfo.org> (last visited June 29, 2012).

The ABFO guidelines do not indicate a preferred method for bite mark analysis, nor do they offer criteria to determine how likely each method of analysis is to yield a match. *Id.* at 106. Indeed, it is not possible to determine the likelihood of any particular method producing a random match because, as the NRC Report found, there are no large population studies to establish the putative uniqueness of the human dentition. NRC Report at 174. Without such population studies, it is impossible to assess the number of characteristics that must match in order to have any particular degree of confidence about the source of the impression. Consequently, terms such as “consistent with” or “match” or testimony that the bite mark was “made by the defendant,” as Dr. Marshall opined at Mr. Prade’s trial, are in fact meaningless subjective opinions, without any empirical basis.⁴

Thus, courts and jurors frequently accept the testimony of forensic odontologists as scientific proof despite the fact that “there is no accurate way to measure the reliability of bite mark comparisons, and the method has gained acceptance without benefit of broadly reviewed research and scientific validation, elements that separate true science from guesswork.” McRoberts & Mills, *From the Start, a Faulty Science*, at 2. The consequence of this overreliance on the flawed methodology of bite mark analysis becomes clear as new DNA testing techniques,

⁴ Moreover, ABFO guidelines are not mandatory, and many experts have selectively applied them or ignored them entirely. *Id.* at 175. (“There is no intention for the ABFO to mandate methods, but instead to provide a list of generally accepted valid methods....”).

such as those applied here, have proven that “even a number of the discipline’s pioneers have contributed to wrongful arrests and put innocent people behind bars.”⁵ For these and other reasons, David Faigman, a professor at University of California Hastings College of the Law, and co-editor of *Modern Scientific Evidence*, has been quoted as saying that “I think bite marks probably ought to be the poster child for bad forensic science.” *Id.*

2. **Bite Mark Identification Analysis Has an Extremely High Error Rate**

New research into three of the fundamental assumptions of bite mark identification analysis (transferability, accuracy and uniqueness) demonstrates why such forensic analysis has such an unacceptably high error rate and a strong propensity to creating false positive matches. First, bite mark identification analysis generally yields inaccurate results because human skin—unlike, for example, certain wax—is not an ideal medium for leaving dental impressions. The high tendency for human skin to distort a bite mark limits the accuracy of bite mark identification analysis. See Mary A. Bush et al, *Inquiry into the Scientific Basis for Bitemark Profiling and Arbitrary Distortion Compensation*, 55 J. Forensic Sci. 976, 976 (2010). See also I. A. Pretty, *Unresolved Issues in Bitemark Analysis*, in *Bitemark Evidence* 547, 549 (Robert B.J. Dorian Ed. 2005) (noting that “[s]kin is a poor registration material It has been argued that any bitemark on skin will have some degree of distortion....”); Pretty, *A Web-Based Survey* at 1; NRC Report at 174-75. Because skin on a corpse deteriorates over time, “a bite mark may mimic a dentition other than the perpetrator’s,”⁶ or leave an impression that is different than what

⁵ “In some instances, odontologists can’t even agree on the most basic issue – whether a wound is a bite mark at all. Forensic odontology has come to represent a case study in how easily forensic science’s false aura of infallibility can distort the adversarial system of American justice.” *Id.* at 2.

⁶ In a 2009 study, several dental casts taken from control people were a better fit for the bite mark than the cast from the actual perpetrator, with bite marks on human skin showing gaps where there were no missing teeth or appearances of tooth rotation where none actually existed. See Bush, *Inquiry into the Scientific Basis* at 976, (citing

would be expected based on a direct comparison to a bite mold (the methodology used in Mr. Prade's case). See Bush, *Inquiry into the Scientific Basis* at 976.

Recent research also undermines a third core assumption of bite mark comparison: the uniqueness of human dentition. Dr. Bush's 2010 study showed that "in many instances, the bite pattern, if profiled, would misdirect an investigator to a person that had features not present in the perpetrator's dentition." See *id.* at 978. Because bite marks, by their nature, only include a limited number of teeth, they cannot accurately reflect all of the dental features of any given person, and at best, provide only a partial picture of a person's dentition. See S. Keiser-Nielsen, *Forensic Odontology* 1 U. Tol. L. Rev. 633, 636 (1969). Bush elaborated on her "lack of uniqueness" findings in a 2010 article, concluding that "[s]tatements concerning dental uniqueness with respect to bitemark analysis in an open population are unsupportable." Mary A. Bush, et al *Statistical Evidence for the Similarity of the Human Dentition*, 56 J. Forensic Sci. 118, 122 (2010). Bush's study concluded that human dentition is not unique, as had been originally posited, and that dentition is not a singularly identifying characteristic like DNA. *Id.* See also H. David Sheets et al, *Dental Shape Match Rates in Selected and Orthodontically Treated Populations in New York State: A Two-Dimensional Study*, 56 J. Forensic Sci. 621 (2011); Bowers & Pretty, *Expert Disagreement in Bitemark Casework* at 915.

The final factor contributing to the unacceptably high error rate in bite mark identification analysis has been known for some time. There are no universally accepted analytical techniques and methodologies. While the use of digital overlay imaging has been

Raymond G. Miller et al., *Uniqueness of the Dentition as Impressed in Human Skin: A Cadaver Model*, 54 J. Forensic Sci. 909 (2009)). In a 2010 study, several bite marks on human skin gave the appearance of more teeth than actually existed. See *id.* at 977 (citing Mary A. Bush et al., *The Response of Skin to Applied Stress: Investigation of Bitemark Distortion in a Cadaver Model*, 55 J. Forensic Sci. 71 (2010)). See also *People v. Brown*, 162 Misc. 2d 555, 556, 618 N.Y.S.2d 188 (Cnty. Ct. Cayuga Cnty. 1994).

shown to be more accurate than other methods in matching a suspect's dentition to a bite mark, that is not the method that was used in this case. In fact, few forensic odontologists use this technique, and many continue to use the "direct comparison" method of physically laying a mold of the suspect's teeth over a scaled photograph of the mark, as Dr. Marshall and Dr. Levine did in this case. This methodology is notoriously error-prone. As Dr. Bowers, an odontologist who served on the credentialing committee of the ABFO, noted in one study, "bitemark mis-identifications have resulted from dentists not using high image resolution superimposition or even dental exemplars of any kind. The 'direct comparison' method appears frequently in a high number of bitemark misidentifications where convictions have been later overturned by DNA." Bowers, *Problem Based Analysis* at S104-05.

Studies of false positives show that they are legion. A 1975 study found error rates of 24% under ideal conditions, but error rates shot up to 91% when bites were photographed 24 hours after being made. *See id.* at S106 (citing D. Whittaker, *Some Laboratory Studies on the Accuracy of Bitemark Identification*, 25 Int'l Dent. J. 166 (1975)). A 1999 workshop found 63.5% false positives. *See id.* (citing D.L. Faigman et al., *Modern Scientific Evidence: The Law and Science of Expert Testimony*, 543-46 (2005-06)). The least damning study, performed in 2001, still found false positives at rates between 11.9% and 22.0%. Thus, overall, the data show "a disturbingly high false-positive error rate." *Id.* at S107. "When reputable practitioners strongly disagree with each other, there needs to be a reliable scientific method to prevent past and future errors." *Id.* But forensic odontology lacks that consistent methodology. Additionally, the percentage of false positives increases where police provide forensic odontologists with only a limited number of potential matches. NRC Report at 174 ("As with other 'experience-based' forensic methods, forensic odontology suffers from the potential for

large bias among bite mark experts in evaluating a specific bite mark in cases in which police agencies provide the suspects for comparison and a limited number of models from which to choose from in comparing the evidence.”). Here, where the experts compared the bite mark on Dr. Prade only to a mold made from Mr. Prade’s teeth, the universe of potential matches was, in fact, only one.

Astonishingly, in a 2002 study, Dr. Bowers concluded that, on average, forensic odontologists “falsely identified an innocent person as the biter nearly two-thirds of the time.” McRoberts & Mills, *From the Start, a Faulty Science* at 2. Dr. Pretty explained that, “there’s a lot of pressure, and conclusions are overstated” by forensic odontologists who are testifying at trial, where prosecutors pressure experts to conclude that only the defendant could have made the bite mark in question. *Id.* This pressure leads to an extremely high error rate, as evidenced by the cases of other criminal defendants who have been falsely identified as the only person who could have possibly made the bite mark, and convicted largely on the strength of that evidence, only to be vindicated years later by definitive DNA testing. *Id.* The trial record of bite mark testimony, coupled with the results of the recent post-conviction DNA testing, raises a strong inference that something similar happened in Mr. Prade’s case as well.

3. Erroneous Bite Mark Analysis Has Led to Many Wrongful Convictions, Which Have Later Been Overturned By DNA Evidence

In recent years, there have been several high profile cases in which innocent people were convicted on the basis of faulty bite mark analysis were later exonerated by DNA testing. *See, e.g.,* Melanie Lasoff Levs, *Bitemark Evidence Loses Teeth*, 94 A.B.A.J. 16 (2008) (Kennedy Brewer and Levon Brooks); Mark Hansen, *The Uncertain Science of Evidence*, 91 A.B.A.J. 48 (2005) (Ray Krone); *Waco Men Were Victims of an Investigation Gone Awry*, AP State & Local

Wire, (Dec. 15 2001) (Calvin Washington and Joe Sidney Williams, Jr.). According to Innocence Network member the Wisconsin Innocence Project, a program affiliated with the University of Wisconsin Law School, bite mark evidence is “a flawed and highly unreliable form of evidence, with little scientific foundation. In recent years, erroneous bite mark evidence has played a role in at least seven other wrongful convictions, which have later been overturned by DNA testing.” See Tom Kertscher, *Freed Man Won't Be Retried for '84 Killing*, Milwaukee Journal Sentinel (July 29, 2009).

At least 13 cases have been reported to date in which people accused or implicated on the basis of what turned out to be faulty bite mark evidence were later proven to be innocent through DNA testing. In some of these cases, DNA testing excluded the defendant prior to trial, preventing a grave miscarriage of justice. See, e.g., *Burke v. Town of Walpole*, 405 F.3d 66, 73-74 (1st Cir. 2005); *Otero v. Warnick*, 241 Mich.App. 143, 144-145, 614 N.W.2d 177 (Mich.Ct.App. 2000); *Mississippi v. Gates*, No. 5060 (Miss.Cir.Ct., Humphrey Cnty. 1998) (cited in 3 *Modern Scientific Evidence: The Law and Science of Expert Testimony* 527 (David L. Faigman et al., Eds. 2002)); *Florida v. Dale Morris*, 97-3251 CFAES, (Fla. Pasco County Ct. 1997); *Mississippi v. Bourn*, No. 93-10,214(3) (Miss.Cir.Ct., Jackson Cnty. 1993) (cited in 3 *Modern Scientific Evidence* 527). See also McRoberts & Mills, *From the Start, a Faulty Science* (discussing cases of Dale Morris, Jr. and Edmund Burke); Hansen, *Out of the Blue* (discussing case of Johnny Bourn).

The consequences can, however, be much more severe than a false accusation that goes no further. In at least eight other known cases to date, defendants have been wrongly convicted on the basis of faulty bite mark evidence and spent years incarcerated, some on death row, before post-conviction DNA testing exonerated them and revealed the errors in the trial testimony. See,

e.g., *O'Donnell v. New York*, 26 A.D.3d 59, 60-61, 808 N.Y.S.2d 266 (N.Y.App.Div. 2d Dept. 2005)(James O'Donnell); Sharif Durhams, *Judge Frees Man After 23 Years*, Milwaukee Journal Sentinel (Jan. 30, 2009) at A1 (Robert Lee Stinson); Fernanda Santos, *With DNA From Exhumed Body, Man Finally Wins Freedom*, N.Y. Times (Jan. 24, 2007) at B5 (Roy Brown); Paul Purpura, *Long Nightmare Ending for Wrongly Convicted Man; DNA Brings Dismissal of Case After 16 Years*, New Orleans Times-Picayune (May 26, 2006) at 1 (Willie Jackson); Steve Mills & Jeff Coen, *12 Years Behind Bars, Now Justice at Last*, Chicago Tribune (Feb. 1, 2005) at C1 (Dan Young, Jr.); Levs, *Bitemark Evidence Loses Teeth* at 16 (Kennedy Brewer and Levon Brooks).

The facts in these cases share much in common with the case before this Court. Mr. Prade was convicted primarily on the basis of forensic testimony regarding a bite mark match (the only physical evidence against him), and subsequent DNA testing has definitively excluded him and identified the DNA of another man, who is likely the true killer. Following are some case studies of other individuals who were convicted on the basis of bite mark evidence and later exonerated on the basis of DNA evidence:

- **Ray Krone.** In a 1992 case in Arizona, Ray Krone was convicted of kidnapping and murder and sentenced to death after a forensic odontologist matched his teeth to the bite marks left on the victim, a waitress at a local diner named Kim Ancona. *See State v. Krone*, 182 Ariz. 319, 319-20, 897 P.2d 621 (Ariz.Sup.Ct. 1995). The bite marks were the state's only physical evidence tying Krone to the crime. *See id.* At trial, the forensic odontologist testified that he was certain that Krone made the bitemarks. The expert testified "that's as nice a match as we – as we really ever see in a bite mark case." Garrett & Neufeld, *Invalid Forensic Science Testimony* at 69-70 (quoting *State v. Krone* trial transcript). The expert concluded that "it was Ray Krone's teeth." *Id.* The second expert in forensic odontology concurred, stating "I say that there is a match. Okay? I'm saying there's a definite match." *Id.* In 2002, Krone was exonerated after DNA testing on the victim's saliva-stained shirt led to the identification of a male DNA profile, which was run against the FBI's CODIS database. *See* Mark A. Godsey & Marie Alou, *She Blinded Me With Science: Wrongful Convictions and the "Reverse CSI-Effect"*, 17 Texas Wesleyan L. Rev. 481, 485-86 (2011). A match there identified

Ancona's actual murderer. *See id.* *See also Ray Krone*, Forensic Odontology, <http://bitemarks.org/tag/ray-krone/> (last visited June 29, 2012).

- **Roy Brown.** In a 1992 case in New York, Roy Brown was tried and convicted for the murder of a social services worker whose body was found with seven bite marks on it. *See People v. Brown*, 162 Misc.2d 555, 556, 618 N.Y.S.2d 188 (Cnty. Ct. Cayuga Cnty. 1994). A lab test confirmed that two of the bite marks had saliva on them, but blood group testing on the swabs was inconclusive. *Id.* At trial, evidence was introduced that: 1) the defendant had made threats against social service workers for taking his children from him; 2) that when angry, the defendant had a propensity to bite the target of his anger; 3) that defendant had admitted that he killed a girl; and 4) that evidence of the bite marks found on the victim was compared with dental impressions from the defendant, which established the bite patterns to be identical to defendant's dentition in terms of measurements and location of teeth. *Id.* The prosecution's bite mark expert testified that the bite marks matched Brown's dentition to "a reasonable degree of dental certainty," and described the differences he observed as "[i]nconsistent but explainably so in [his] opinion." Garrett & Neufeld, *Invalid Forensic Science Testimony* at 69 (citing to *People v. Brown* trial transcript). During his time in prison, Brown sought access to DNA testing, but his petition was denied. *Brown*, 162 Misc.2d at 558. When prosecutors finally consented to allow DNA testing in 2006, the tests excluded Brown as the biter and confirmed that the DNA from the saliva samples matched a man who Brown had identified. *See John Smith, Another Chance for Convicted Murderer*, Post Standard (Syracuse, NY) (Apr. 21, 2006) at A1; Santos, *With DNA from Exhumed Body, Man Finally Wins Freedom*, at B5. Brown was exonerated and released after serving 15 years in prison. *Id.*
- **Edmund Burke.** In a 1998 case in Massachusetts, Edmund Burke was arrested for raping and murdering a 75-year-old woman, who had bite marks on her breasts after the attack. *See Burke*, 405 F.3d at 73-74. Burke agreed to provide a sample of his saliva and allowed police to make a mold of his teeth to compare to the bite mark. *Id.* at 72-73. The State retained Dr. Lowell Levine as a bite mark analysis expert, the same expert who testified for the State in Mr. Prade's case. *Id.* at 73. In the *Burke* case, Dr. Levine "formed an initial opinion that Burke could not be excluded as the source of the bite marks," but asked to see enhanced photos before rendering a final opinion. *Id.* After examining the enhanced photos, Dr. Levine concluded that "Burke's teeth matched the bite mark on the victim's left breast to a 'reasonable degree of scientific certainty.'" *Id.* However, DNA testing on saliva taken from the bite mark site excluded Burke as the source of the DNA, and prosecutors dropped the case against Burke. *Id.* at 74. The true killer was later identified by matching the DNA from the bite mark site to a profile in the national DNA database. *Id.* at 74, n.6.
- **Bennie Starks.** In a 1986 case in Wisconsin, Bennie Starks was convicted of rape based on a bite mark comparison and sentenced to 60 years in prison. *See*

also Donna Domino, Dentists Sue Over Bite Mark Testimony, DrBicuspid.com, (Jan. 18, 2012), available at <http://www.drBicuspid.com> (last visited June 29, 2012). After two forensic odontologists, Dr. Russell Schneider and Dr. Carl Hagstrom, testified that Starks' teeth matched bite marks found on the victim, Starks was convicted at trial and spent 20 years in prison. *Id.* After post-conviction DNA testing of a vaginal swab identified the DNA of another male suspect and excluded Starks, a new trial was ordered in 2006, at which point prosecutors declined to retry the case and Mr. Starks was freed. *See* Dan Hinkle, *After 20 Years in Prison, Man Cleared in '86 Waukegan Rape*, Chicago Tribune (May 15, 2012).

Through DNA testing, these cases (along with many others) make clear the truth that bite mark analysis is so often faulty that courts should not admit testimony regarding a supposed bite mark match as reliable expert testimony. Indeed, faulty forensic testimony is one of the leading causes of wrongful convictions. A 2005 study reported that, of the 86 DNA exoneration cases examined, 63% included erroneous forensic science testimony that contributed to the conviction. *See* Bowers, *Problem-Based Analysis* at S105, Fig. 1 (citing to M.J. Saks & J.J. Koehler, *The Coming Paradigm Shift in Forensic Identification Science*, 309 *Science* 892 (2005)). Thus, in light of the exculpatory DNA evidence in Mr. Prade's case, the bite mark analysis from his first trial should be precluded as junk science, or accorded substantially less weight at a new trial.

B. Eyewitness Identification Testimony Is Often Unreliable

The United States Supreme Court and courts throughout the country have long recognized the significant and unique dangers that the admission of unreliable eyewitness testimony can pose for the criminal justice system. Forty-five years ago, long before the era of exculpatory DNA evidence, the United States Supreme Court described "the annals of criminal law" as "rife with instances of mistaken identification." *United States v. Wade*, 388 U.S. 218, 228 (1967). By the time of the Supreme Court's decision in *Wade*, "[t]he vagaries of eyewitness identification" were already "well-known." *Wade*, 388 U.S. at 228. Most recently, the New

Jersey Supreme Court issued a landmark decision, *State v. Henderson*, 27 A.3d 872 (2011), which altered the landscape for the admissibility of eyewitness identification evidence in that state. The *Henderson* court also reviewed the vast body of scientific literature concerning eyewitness memory and identification and found it to be the “gold standard in terms of the applicability of social science research to the law.” *Id.* at 916. At least one court in Ohio has recognized the scientific findings of the *Henderson* court. *See State v. Gillispie*, 2d Dist. No. 24456, 2012 WL 1264496 (Ohio Ct. App. Apr. 13, 2012) (Grady J. concurring).

In recent years, the spate of wrongful convictions exposed by DNA evidence and other means has borne out long-held judicial concerns about the reliability of eyewitness identification evidence in general and suggestive identifications in particular. To date, 292 individuals in the United States have been exonerated by post-conviction DNA evidence. Ten of these exonerees were convicted in the state of Ohio—and in nine of those cases, eyewitness misidentification played a central role in the underlying conviction.⁷ Ohio’s experience reflects what Amicus the Innocence Network knows from its exonerations: eyewitness misidentification is the most common cause of wrongful convictions, accounting for a full 72 percent of the 292 exonerations secured by its work.⁸ In 38 percent of eyewitness misidentification cases, multiple eyewitnesses

⁷ *See Search the Profiles*, The Innocence Project, <http://www.innocenceproject.org/know/Search-Profiles.php> (last visited June 30, 2012).

⁸ *See Eyewitness Misidentification*, The Innocence Project, <http://www.innocenceproject.org/understand/Eyewitness-Misidentification.php> (last visited June 30, 2012), citing the rate of eyewitness misidentification in the first 273 exonerations as 75 percent. *Accord* Brandon L. Garrett, *Convicting The Innocent: Where Criminal Prosecutions Go Wrong* 48 (2011) (eyewitness misidentification testimony contributed to the underlying convictions in 76% of the first 250 post-conviction DNA exonerations that occurred in the United States since 1989); Samuel R. Gross et al., *Exonerations in the United States, 1989 Through 2003*, 95 J. Crim. L. & Criminology 523, 542 (2005) (concluding that “[t]he most common cause of wrongful convictions is eyewitness misidentification” and finding at least one mistaken identification in 64 percent of all exonerations (DNA and non-DNA) from 1989 through 2003); U.S. Dep’t of Justice, Nat’l Institute of Justice, *Convicted by Juries, Exonerated by Science: Case Studies in the Use of DNA Evidence to Establish Innocence After Trial*, Pub. No. NCJ 161258, 24 (1996), available at <https://www.ncjrs.gov/pdffiles/dnaevid.pdf> (in a study of 28 DNA exonerations, the Department of Justice found that, in a majority of the cases, eyewitness misidentifications served as “the most compelling evidence” at trial).

misidentified the same innocent person and 45 percent of eyewitness misidentification cases involved a cross-racial identification. *Id.*

Over the last thirty-plus years, social scientists have conducted thousands of eyewitness identification experiments, resulting in a robust body of rigorous, peer-reviewed research that explains why witnesses are so often wrong. This research has explored and can provide guidance on the mental processes of forming, storing and retrieving memories, as well as the extent to which memories can be distorted by time and external influences. These experiments demonstrate how certain factors, both in isolation and in tandem with other factors, can erode the reliability of eyewitness identification evidence. This research enjoys consensus among social scientists, has achieved general acceptance in the public and has been hailed as the “gold standard.” *Henderson*, 27 A.3d at 917. (“Experimental methods and findings have been tested and retested, subjected to scientific scrutiny through peer-reviewed journals, evaluated through the lens of meta-analyses, and replicated at times in real-world settings. . . . [C]onsensus exists among the experts who testified on remand and within the broader research community.”) This research has been published in hundreds of articles in a range of peer-reviewed psychological journals. A search of psychological journals using an assortment of keywords such as “eyewitness” and “identification” in psychology journal databases such as PsychINFO reveals that the number of relevant published articles has increased 6,000 percent since the 1970s, and almost 150 percent since the 1990s, when Mr. Prade was convicted based on eyewitness identification testimony that, when examined through the lens of this research, is demonstrably unreliable.

Taken together, the cases of exonerees whose convictions were obtained through reliance on eyewitness misidentifications and the vast body of scientific research relating to eyewitness

memory and identification have led to the emergence of recommended “best practices” governing the collection of eyewitness identifications by law enforcement. These best practices reflect the understanding of memory as fragile and easily contaminable by external factors. In 2010, the Ohio legislature recognized the fragility of memory and the fallibility of eyewitness identifications in passing one of the most rigorous laws governing eyewitness identification procedures in the country. R.C. § 2933.83. While an analysis of the identification procedures used by law enforcement in Mr. Prade’s case is now impossible, law enforcement officials engaged in practices that, at a minimum, did not preserve the integrity of the witnesses’ independent memories and, at worst, influenced those witnesses to identify Mr. Prade, law enforcement’s prime suspect in his wife’s murder, despite the fact that neither had a clear, articulable, independent memory of the individual they saw near the scene of Dr. Prade’s murder.

1. Scientific Research Concerning Eyewitness Memory and Identification is Robust, Consistent, and Rigorous

The scientific rigor of eyewitness identification research is established not only by its quantity, as demonstrated by hundreds of published studies, or its quality, as shown by its presence in reputable peer-reviewed psychology journals, but also by the consistency of its findings on particular variables, which are best captured by meta-analytic reviews within the academic literature. Meta-analyses combine data sets from large numbers of published studies performed by different researchers in different labs under different circumstances (and can also include the results of field studies), and convert them into a common metric known as the ‘effect size.’ Peter Shapiro & Steven Penrod, *Meta Analysis of Facial Identification Studies*, 100 *Psychol. Bull.* 140, 140 (1986).

Scientists analyzing the nature of memory have focused on its three discrete stages: (1) the acquisition or encoding stage, when a witness perceives an event and information is thereby entered into the memory system; (2) the retention or storage stage, the period between acquisition and the witness's attempt to recall the information; and (3) the retrieval stage, when the witness attempts to recall the stored information. *See* Elizabeth F. Loftus et al., *Eyewitness Testimony: Civil and Criminal* § 2-2, at 13 (4th ed. 2007). “This three-stage analysis is central to the concept of human memory,” and “[p]sychologists who conduct research in this area try to identify and study the important factors that play a role in each of the three stages.” *Id.* Those psychologists have identified in particular numerous factors that may adversely affect an eyewitness's memory at each stage. At the acquisition stage, memory is subject to both event-specific variables (such as duration of the event) and witness-specific variables (such as race vis-à-vis the race of the perpetrator). *Id.* At the retention stage, additional factors such as the passage of time or post-event information may contaminate the witness's memory. *Id.*⁹

Building on this body of research regarding the nature of memory generally, scientists have conducted a large number of empirical studies—most using controlled experimental methods—that document the adverse impact of various factors on the accuracy of eyewitness identification. As the New Jersey Supreme Court found in *Henderson*,

[T]he science abundantly demonstrates the many vagaries of memory encoding, storage, and retrieval; the malleability of memory; the contaminating effects of extrinsic information; the influence of police interview techniques and identification procedures; and the many other factors that bear on the reliability of eyewitness identifications.

⁹ Because memory is subject to many sources of contamination, researchers have recommended that it be regarded as similar to a fingerprint, hair sample, or other trace evidence from a crime scene. *See, e.g.*, Gary L. Wells, *Eyewitness Identification: Systemic Reforms*, 2006 Wis. L. Rev. 615, 622-23 (2006).

Henderson, 27 A.3d at 916. Due to the breadth and depth of this research, almost any overview of it is necessarily incomplete, and we therefore focus principally on the factors that arise directly in this case.¹⁰

2. The Scientific Research as Applied in This Case Suggests That Both Witnesses Who Identified Mr. Prade at Trial Would Not Have Been Able to Make Accurate Identification of the Person They Saw

A) The Acquisition or Encoding Stage: The Opportunity to View and The Degree of Attention Paid Affect the Ability to Encode Information Completely and Accurately.

(1) Exposure Duration: The less time that a witness views a face, the less reliable the identification.

Scientific research has confirmed that the longer an eyewitness looks at a person, the more likely he will be to correctly identify that person. Likewise, “the less time a witness has to look at something, the less accurate the perception.” Elizabeth Loftus, *Eyewitness Testimony* 23 (1996 Ed.). Research has demonstrated that there is reliable relationship between the length of time that a witness observes someone and the accuracy of a subsequent identification: limiting exposure time generally reduces accuracy. See, e.g., Brian H. Bornstein et al., *Effects of Exposure Time and Cognitive Operations on Facial Identification Accuracy*, *Psychol., Crime and L.* (June 2012). One study found an accuracy rate of 85% to 95% when subjects were exposed for 45 seconds to the image of the perpetrator during a videotaped reconstruction of robbery, and a subsequent photo array contained the perpetrator. But that rate fell to between 29% and 35% when the exposure lasted only twelve seconds.

¹⁰ More extensive discussions appear in, for example, Gary L. Wells et al., *Eyewitness Evidence: Improving Its Probative Value*, 7 *Psychol. Sci. Pub. Int.* 45, 51-68 (2006); Gary L. Wells & Elizabeth A. Olsen, *Eyewitness Testimony*, 54 *Annual Rev. Psychol.* 277, 280-90 (2003).

In this case, Mr. Brooks saw the person he later identified as Mr. Prade for a few seconds *at most*, through the window of a speeding car that was driving away from him. Similarly, Mr. Husk saw the person he later identified as Mr. Prade for *at most* ten seconds, in a completely routine and non-suspicious context that would not have caused him to take note of the features of the person he identified ten months later. Scientific research strongly suggests that such limited exposures would not allow individuals to form a reliable memory of a stranger's face.

(2) Attention: The less attention paid by a witness, the less reliable the identification.

Scientific research also demonstrates that the degree of attention paid to an event correlates to the strength of the memory created; similarly, where an event presents some sort of novel stimulus or generates certain strong emotions, people are more likely to remember salient details in a heightened state of awareness. As Loftus explains, “[t]he extraordinary, colorful, novel, unusual, and interesting scenes attract our attention and hold our interest, both attention and interest being important aids to memory. The opposite of this principle is inversely true—routine, commonplace and insignificant circumstances are rarely remembered as specific incidents.” Loftus, *Eyewitness Testimony* at 27 (quoting Dillard S. Gardner, *The Perception and Memory of Witnesses*, 18 Cornell L. Q. 391, 394 (1933)).

In this case, both witnesses based their identifications of Mr. Prade on a brief, routine interaction with a stranger and only later learned that a murder had been committed nearby. Both men admitted that they did not pay careful attention to the individual they saw and neither indicated paying the kind of heightened attention that would be an indicia of reliability for their later eyewitness identification.

(3) Distance and Disguise: The risk of mistaken identification is increased by the distance at which the observation is made and by the presence of common minimal disguises, including hats.¹¹

Research has found, not surprisingly, that the ability to identify the faces of strangers is negatively affected by the distance between the viewer and the object. For people with normal vision, the ability to identify faces begins to diminish at approximately 25 feet, and is nearly impossible at approximately 150 feet.¹² Likewise, research has shown that the encoding process for storing information about a face is impaired when a perpetrator is wearing glasses, a hat or has facial hair.¹³

One experiment measured the effects of such “disguise” on subsequent identification accuracy by using a perpetrator in a staged setting who wore a knit pullover cap covering his hair and hairline in some cases and not in others. Identification accuracy was appreciably reduced for witnesses in the disguise condition, from 45% accuracy in the no-hat condition, to 27% in the disguise condition. See Brian L. Cutler, Steven D. Penrod, & Todd K. Martens, *Improving the Reliability of Eyewitness Identification: Putting Context Into Context*, 72 *J. Applied. Psychol.* 629 (1987).

In this case, Mr. Brooks was at least 25 feet away from the speeding car at the closest point, and the car was speeding away from him. In addition, Mr. Brooks testified that the driver

¹¹ Brian Cutler & Margaret Bull Kovera, *Evaluating Eyewitness Identification*, 43-44 (2010).

¹² See Geoffrey R. Loftus & Erin M. Harley, *Why Is It Easier To Identify Someone Close Than Far Away?*, 12 *Psychonomic Bull. & Rev.* 43, 63 (2005). See also Christian A. Meissner et al., *Person Descriptions as Eyewitness Evidence*, in 2 *The Handbook of Eyewitness Psychology: Memory for People 3* (R.C.L. Lindsay et al. Eds., 2007); R.C.L. Lindsay et al., *How Variations in Distance Affect Eyewitness Reports and Identification Accuracy*, 32 *Law & Hum. Behav.* 526 (2008).

¹³ Gary L. Wells, et al., *Distorted Retrospective Eyewitness Reports as Functions of Feedback and Delay*, 9 *J. Experimental Psychol.: Applied* 42, 100 (2003); K.E. Patterson, & A.D. Baddeley, *When Face Recognition Fails*, 3 *J. Experimental Psychol.: Hum. Learning & Memory* 406 (1977); J. Don Read, et al., *Changing Photos of Faces: Effects of Exposure Duration and Photo Similarity on Recognition and the Accuracy-Confidence Relationship*, 16 *J. Experimental Psychol.: Learning Memory & Cognition* 870 (1990).

was wearing a hat, further compounding his ability to make an accurate identification. Under these conditions, scientific research suggests that a reliable stranger identification would be difficult, if not impossible, to make.

- (4) Frequency of Exposure: Stranger identifications are difficult, particularly when the person has been seen only once.

Another acquisition stage factor identified by Loftus is frequency of exposure: “the number of opportunities that an individual has to perceive particular details that are to be remembered later.” Loftus, *Eyewitness Testimony* at 24. This is based on the common-sense principle that “something that is experienced many times is going to be remembered better than something that is encountered only once.” *Id.* at 24-25 (citing Burt, *Applied Psychology* 302 (1948)). Here, both Brooks and Husk testified that they had never before seen the person each encountered near the crime scene, making it difficult for either to accurately encode a memory of that person’s face – particularly given all of the other variables that likewise made encoding difficult. As discussed in greater detail below, the multiple exposures each man likely had to Mr. Prade’s images produced in media reports about the murder over the months after the murder likely created an unconscious transference whereby each witness associated Mr. Prade’s face with the individual they claim to have seen on the day of the murder, albeit briefly.

- B) The Retention or Storage Stage: Memory decays with time and is subject to contamination from outside sources.

- (1) Retention Interval: The more time that passes between an incident and an identification, the less reliable the identification.

In the retention stage, memories can and do degrade over time. “[T]he greatest memory loss following an event occurs soon after the event. More specifically, the shape of the forgetting curve is a negatively decelerating function of time. This means that each time frame

(whether measured in minutes, hours, or days) produces a greater loss in memory than the same time frame that follows it. Hence, more memory is lost in the first hour than in the second hour, more in the first day than the second day, more in the first week than in the second week, and so on.” Gary L. Wells & Deah S. Quinlivan, *Suggestive Eyewitness Identification Procedures and the Supreme Court’s Reliability Test in Light of Eyewitness Science: 30 Years Later*, 33L. & Hum. Behav. 1, 13 (2009). In the context of eyewitness identifications, scientists have found that “[i]n general, eyewitness identification experiments show that the elapsed time between witnessing an event and later identification accuracy is negatively correlated with accurate identifications and positively correlated with mistaken identifications.” *Id.* at 14 (citing B.L. Cutler & S.D. Penrod, *Mistaken Identification: The Eyewitness, Psychology, and the Law* (1995); P.N. Shapiro & S. Penrod, *Meta-analysis of Facial Identification Studies*, 100 Psychological Bulletin 139 (1986)).

Here, as discussed above, both Husk and Brooks did not initially identify Mr. Prade as a suspect, and only came forward identifying him after a period of months. Brooks identified Mr. Prade after three interviews occurring over approximately three months, and Husk identified Mr. Prade reluctantly nearly ten months later on the eve of trial. Thus, it is reasonable to assume that their memories had significantly degraded by the time they identified Mr. Prade as the killer.

(2) Unconscious transference: A memory of one person can be replaced with an image of a different person who is otherwise familiar to the witness.

It is well-settled in the scientific literature that witnesses can be influenced by a host of exogenous factors that can shape their recollection of events after the fact. As Wells and Quinlivan explained, “[p]ost-event influence refers to the fact that eyewitnesses’ recollections of an event can be affected by ‘information’ acquired well after the witnessing event has occurred.

For example, after witnessing a clean-shaven person commit an act, participant-witnesses who were given information suggesting that he had a moustache incorporated that information into their later descriptions of the person.” Wells & Quinlivan, *Suggestive Eyewitness Identification Procedures* at 14 (citing E.F. Loftus & E. Greene, *Warning: Even Memory for Faces May Be Contagious*, 4 L. & Hum. Behav. 323 (1980)).

As Wells and Quinlivan explained, “greater amounts of time permit greater opportunity for post-event influences to affect memory: Detectives can inadvertently insert information into their questions, witnesses can have their memory contaminated by other witnesses, witnesses can glean ‘facts’ from newspaper stories about the crime, and so on. Hence, it is not just forgetting that is a problem with the passage of time, it is also the fact that time passage permits events that can create changes in how the witness remembers the original event. Later, witnesses cannot effectively parse what they actually saw from what they might have acquired later.” *Id.* at 14. This effect becomes more pronounced with the passage of time. *Id.* (citing E.F. Loftus et al., *Semantic Integration of Verbal Information into Visual Memory*, 4 J. of Experimental Psychol.: Hum. Learning & Memory 19 (1978) (“The longer the time between the witnessed event and the introduction of misleading post-event information, the greater the effect of the misleading information on witness’s subsequent reports.”)).

A positive identification indicates that a witness is familiar with a face, but not necessarily that the face is that of the perpetrator. The witness may have unconsciously transferred one person’s identity to that of another person from a different setting, time, or context.¹⁴ “Unconscious transference” can occur when a witness confuses a person associated

¹⁴ Kenneth A. Deffenbacher et al., *Mugshot Exposure Effects: Retroactive Interference, Mugshot Commitment, Source Confusion, and Unconscious Transference*, 30 Law & Hum. Behav. 287, 289, 306 (2006).

with the crime – such as in media reports – with the person actually observed at or near the crime.

Dr. Prade’s murder and the arrest of her husband, a police captain, was widely reported during the period between the crime and Mr. Prade’s trial. Mr. Husk acknowledged seeing Mr. Prade’s photograph on the news on the evening of the murder and again over the nine months before he made an affirmative identification of Mr. Prade. Indeed, Mr. Husk admitted discussing with his boss a newspaper article in which Mr. Prade was identified as the prime suspect just hours before Husk finally identified Mr. Prade to authorities. It is highly likely that Mr. Husk’s identification was influenced by this information and that his memory of the brief interaction with the man later identified as Mr. Prade was shaped by these later events. While the record is less clear as to whether Mr. Brooks saw images of Mr. Prade on television and in the newspaper in connection with the case, it is certainly possible that he did, as it was a high profile case that received extensive media coverage prior to Mr. Brooks’s identification.

C) The Retrieval Stage: Multiple viewings undermine the reliability of later identifications.

Viewing a suspect more than once during an investigation can affect the reliability of the later identification, as they create a risk of “mugshot commitment.” Deffenbacher et al., *Mugshot Exposure Effects* at 287. “Mugshot commitment” occurs when a witness identifies an individual in an earlier procedure and then becomes more likely to affirm that identification if the photograph is then included in a later identification procedure. *Id.* Studies have shown that once witnesses identify an innocent person from an identification procedure, “a significant

number” then “reaffirm[] their false identification” in a later identification procedure—even if the actual target is present.¹⁵

In this case, both witnesses made in-court identifications of Mr. Prade, the only African-American man sitting at counsel table during the trial. These in-court identifications—known to be highly persuasive to jurors—were later identifications that followed prior viewings of Mr. Prade’s mugshot and/or or Mr. Prade’s image in media reports. It is impossible to know, then, whether these in-court identifications were based on the witnesses independent recollections or if they were the result of the “mugshot commitment effect”—an affirmation of their earlier choice.

In light of the exculpatory DNA evidence that now exists in this case, Mr. Husk’s and Mr. Brooks’ witness testimony would likely be accorded substantially less weight by a jury at a new trial. If there is a new trial, the court would have to examine any eyewitness evidence that was to be presented on a motion under the standard set forth in *Daubert v. Merrell Dow Pharms.*, 509 U.S. 579 (U.S. 1993) to determine whether such evidence would even be admissible. Mr. Prade should, at the very least, have the opportunity to present this new DNA evidence at a new trial so that it can be weighed against the likely faulty eyewitness testimony.

3. Many of The Innocence Network’s Cases in which Wrongly Convicted People Were Exonerated by Post-Conviction DNA Testing, Are Similar to Mr. Prade’s Case With Regard to Questionable Eyewitness Identification Testimony

The cases of many of Amicus The Innocence Network’s clients share striking similarities with Mr. Prade’s case; and The Innocence Network urges this Court to consider the role of eyewitness misidentification in wrongly convicting the innocent.

¹⁵ See Gunter Koehnken et al., *Forensic Applications of Line-Up Research, in Psychological Issues in Eyewitness Identification* 205, 219 (Siegfried L. Sporer et al. Eds., 1996).

- **Clarence Elkins.** In a 1998 Summit County, Ohio case, Clarence Elkins was convicted of raping and murdering his mother-in-law, Judy Johnson, and raping his niece, Brooke Sutton, based largely on the eyewitness testimony of his niece, and sentenced to life in prison. *See Elkins v. Summit Cnty.*, N. D. Ohio No. 5:06-CV-3004, 2009 WL 1150114, at *1 (Apr. 28, 2009). The crime occurred late at night on June 6, 1998, in Judy Johnson's home. *Id.* Six year old Brooke, who had been raped, strangled, and left unconscious, was the only surviving witness to the crime. *Id.*; *State v. Elkins*, 9th Dist. No. 19684, 2000 WL 1420285, at *2 (Sept. 27, 2000). When Brooke fled to a neighbor's home in a state of hysteria, she identified Elkins as the perpetrator. *Id.* Elkins's conviction was based largely on Brooke's faulty eyewitness testimony. In his defense, Elkins offered physical evidence, including hairs collected from Judy's body that did not match Elkins, and an alibi witness in the form of Melinda Elkins, Elkins's wife and the murder victim's daughter, who testified that Elkins had been with her over 40 miles away at the time of the murder. *Elkins v. Summit Cnty.*, 2009 WL 1150114, at *1. Brooke recanted her testimony two years later. *Id.* Meanwhile, Elkins used his own funds to pay for Y-STR DNA testing on evidence from the crime scene. *See Clarence Elkins*, The Innocence Project, www.innocenceproject.org/Content/Clarence_Elkins.php (last visited June 29, 2012). The results of the DNA testing excluded Elkins as the perpetrator but identified the profile of an unknown male's DNA on the bodies of both victims. *Id.* Elkins moved for a new trial on the basis of this evidence, but prosecutors argued that the DNA evidence was contaminated and this Court denied Elkins's motion for a new trial on July 14, 2005. *Id.*

In 2005, Elkins came to suspect that Earl Mann was the rapist and killer. *Elkins v. Summit Cnty.*, 2009 WL 1150114, at *1. Mann lived in the house next to Judy Johnson and was later convicted of an unrelated rape. *Id.* When Mann was placed in the same prison as Elkins, Elkins managed to obtain one of Mann's discarded cigarette butts, which Elkins's attorneys had tested for DNA. *Clarence Elkins*, The Innocence Project. The results of the DNA test proved that Mann had committed the crime. *Elkins v. Summit Cnty.*, 2009 WL 1150114 at *1. In post-conviction proceedings before this Court, Clarence Elkins's conviction was vacated based on this newly discovered DNA evidence, and he was exonerated and released from prison in 2005. *Clarence Elkins*, The Innocence Project. In 2008, Mann pleaded guilty to murder, rape, attempted murder and aggravated burglary in connection with the crime. *Id.*

- **Robert McClendon.** In a 1991 Ohio case, Robert McClendon was convicted of rape and kidnapping and sentenced to 15 years to life in prison. *See Robert McClendon*, The Innocence Project, www.innocenceproject.org/Content/Robert_McClendon.php (last visited June 29, 2012). McClendon's conviction was based largely on faulty eyewitness identification. *Id.* The victim was the sole eyewitness, and though she identified McClendon, her biological father, as the perpetrator, she was blindfolded during the attack and had seen McClendon only once in her entire life. *Id.* The victim even admitted after the attack that she was not entirely sure McClendon was the perpetrator, since her eyes were covered. *Id.* Though McClendon sought DNA testing in 2004 pursuant to the recently enacted Ohio DNA statute, prosecutors objected to the testing,

and the judge assigned to the matter ultimately did not respond to McClendon's request. *See Judge Orders Columbus Man Freed From Prison After DNA Tests, The Columbus Dispatch* (Aug. 13, 2008) www.dispatch.com/content/stories/local/2008/08/11/dna.html (last visited June 29, 2012). In 2008, volunteer DNA analysts discovered semen on the victim's underwear that had not been tested before, and a Y-STR DNA test of the semen excluded McClendon. *See id.*; *Robert McClendon: "Hello Truth"*, DNA Diagnostics Center, (Aug. 27, 2008) www.forensicdnacenter.com/resources/Ohio-Innocence-McClendon-Released.html (last visited June 29, 2012). Two months later, a Franklin County judge ordered that McClendon be released from prison. *Id.* McClendon was exonerated after having served 17 years for a rape that he did not commit. *See Judge Orders Columbus Man Freed, Columbus Dispatch.*

- **Herman Atkins.** Herman Atkins spent 13 years, three months, and six days incarcerated for a crime he did not commit: the rape of a 23-year-old woman. Fred Dickey, *Worst Case Scenario*, L.A. Times Mag. (Jun. 25, 2000) at 19. The victim, who was white, was initially unable to identify Herman, who is black, from high school yearbooks she was shown by police conducting the investigation. *Id.* However, while waiting for a detective to return with more photographs, the woman spotted a "Wanted" poster that happened to be lying on a nearby table in the interview room. *Id.* The man on the "Wanted" poster was a young, slim, African-American man and when the detective returned to the interview room the victim told him, "I think this is him. If it's not him, it's someone who looks just like him." *Id.* When recounting that moment on the witness stand at Herman's trial, however, the woman sounded much more definitive; she testified that she turned to her mother, pointed at the poster, and said "That's him." *Id.* The woman called the police, and after undergoing a medical exam, she went into an interview room with her mother to look through photographs in recent yearbooks from local high schools for her attacker. *Id.* She did not recognize anyone from the yearbooks. *Id.*

Herman was prosecuted for the rape and robbery, and the victim took the stand to identify him and testify to details regarding the vicious assault. Samantha Weinberg, *Trials and Errors*, *The Observer* (May 4, 2003) at 23-24. A state serologist testified that the blood markers in the body fluids found on the vaginal swab and the victim's sweater revealed the same blood type as both Herman and the victim, and that Herman could not be excluded as the source. Dickey, *Worst Case Scenario*, at 19. The serologist also said that the markers excluded 94% of the population, a claim later demonstrated to be false. Editorial, *An Innocent Man, 12 Years in Prison*, *San Jose Mercury News* (Mar. 10, 2000) at 6B. On the basis of this evidence, two corroborating misidentifications, and the victim's testimony, Herman was convicted of burglary, rape, and forced oral copulation, and later sentenced to 47 years and 8 months in prison. *See* Weinberg, *Trials and Errors* at 24; Dickey, *Worst Case Scenario* at 19. He was exonerated after serving 12 years in prison. Editorial, *An Innocent Man, 12 Years in Prison.*

- **Wilton Dedge.** Wilton Dedge served 22 years for a rape he did not commit, after being mistakenly identified by the crime victim. Shortly after the attack, the victim described her assailant stood between six feet and six feet two inches tall, and weighed between 160 and 200 pounds. *Dedge v. State*, 442 So.2d 429, 430 (Fla.Ct.App. 1983). She described

him as a muscular man, who “looked like a construction worker” with “big arms” that could easily throw her around and pin her down. Armen H. Merjian, *Anatomy of a Wrongful Conviction: State v. Dedge and What it Tells Us About Our Flawed Criminal Justice System*, 13 U. Pa. J. L. & Soc. Change 137, 143 (2009-10). She said that he had hazel eyes and a receding hairline. *Id.* at 141. On December 12, just four days after the attack, the victim and her sister drove to their nearby hometown and pulled up to a convenience store where she saw a man who looked similar to her attacker, although shorter and with a darker moustache. *Id.* She told her sister that the man was her attacker, and her sister recognized him from elementary school. *Id.* On January 8, 1982, based on the victim’s sister’s recognition, the police arrested Walter Dedge. *Id.* Two days later, police showed the victim’s sister a photo lineup that included Walter’s picture. *Id.* The victim’s sister identified Walter Dedge, but then said that the man her sister identified in the convenience store was not in fact Walter, but his brother, Wilton. *Id.* The following day, police arrested Wilton, and showed the victim a new photo lineup including Wilton’s photo. *Id.* On January 11, 1982, over a month after the rape, the victim identified 20-year-old Wilton Dedge, the man she felt staring at her in the convenience store, as her attacker. *Id.*

During trial, in September of 1982, Wilton took the stand and proclaimed his innocence. *Id.* at 144. No less than six witnesses swore that Wilton was in Smyrna Beach on the day of the attack; four of them testified that they were certain Dedge was at the garage until closing time. *Id.* The prosecution offered three pieces of evidence to implicate Dedge as Trish’s attacker: a pubic hair found on Trish’s bed, a canine scent lineup and identification, and Trish’s testimony. *Id.* at 143. The analyst who initially examined the pubic hair stated in his report that it had similarities and differences to the sample given by Dedge, but that “the differences were not sufficient to entirely eliminate Dedge as a possible source.” *Id.* (quoting Leonora LaPeter, *Guilty Until Proven Innocent*, St. Petersburg Times (Nov. 14, 2004)). The canine scent lineup was conducted three months after the crime, using a scent sample taken eight days earlier from Dedge, on a paper towel handled by others and left in a paper bag. *Id.* The jury deliberated for four hours and found Wilton guilty of the assault. *Id.* After he read the verdict, the judge stated that he was told the jury had based it on Trish’s identification. *Id.* The judge sentenced Wilton to 30 years in prison. *Id.* A second trial resulted in a second conviction, and a life sentence. *Id.* By the time advanced DNA testing finally exonerated Wilton in 2004, he had spent 22 years in prison – more than half his life.

V. CONCLUSION

For all of the foregoing reasons, as well as the reasons contained in the Prade Petition, Amicus Curiae, The Innocence Network, respectfully urges the Court to grant Mr. Prade post-conviction relief, or in the alternative, his motion for a new trial where he could defend himself with the new DNA evidence.

July 3, 2012

Respectfully submitted,

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IN THE COURT OF COMMON PLEAS
SUMMIT COUNTY, OHIO

STATE OF OHIO,)
)
 Plaintiff,)
) Case No. CR 1998-02-0463
 v.)
) Judge Judy L. Hunter
 DOUGLAS PRADE,)
)
 Defendant.)

CERTIFICATE OF SERVICE

On this 2nd day of July, 2012, a true and correct copy of the attached *Amicus Curiae* Brief Of The Innocence Network In Support Of Defendant Douglas Prade was served by e-mail and by overnight courier on:

Mary Ann Kovach
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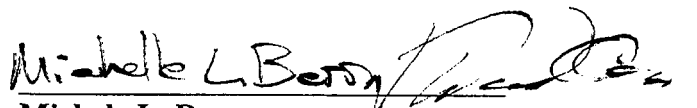
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